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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/574,599	04/05/2006	Satoshi Imaizumi	L9289,06140	4200
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EXAMINER				
NGUYEN, THUAN V				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/574,599

Applicant(s)

IMAIZUMI ET AL.

Examiner

THUAN NGUYEN

Art Unit

4145

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 April 2006.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-3 and 5-10 is/are rejected.
7) ☒ Claim(s) 4 is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/CIS)
Paper No(s)/Mail Date 04/05/2006
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____

DETAILED ACTION

Specification

1. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

2. The abstract of the disclosure is objected to because it exceeds 150 words in length. Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ushirokawa (US Patent No. 7,154,915), and further in view of Yano (US 2006/0126577A1).

3. As per claim 1, Ushirokawa teaches "a wireless communication apparatus for carrying out communication" (Ushirokawa, column 1, lines 9-10 teaches a mobile communication system) "by switching between a plurality of different carriers" (Ushirokawa, column 1, line 27), the wireless communication apparatus comprising:

- "a packet continuation determining section that determines whether packet communication is continuing or paused." (Ushirokawa, figure 2, element S4 teaches a section that determines whether communication data is continuing or paused. Ushirokawa does not teach "packet continuation" and "packet communication". However Yano, teaches "packet continuation" and "packet communication" (Yano, figure 4B teaches consecutive frames with packets and without packets being transmitted on different frequencies.)) Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement "packet continuation" and "packet communication" of Yano into Ushirokawa since Ushirokawa suggests data communication (something broad) in general and Yano suggests the beneficial use of packets such as to include a common type of data communication in the analogous art of telecommunications.

- "a suppressing section that suppresses a switch from a carrier currently used for communication to a different carrier or another carrier when the packet communication is determined to be continuing and that allows the switch to the different carrier when the packet communication is determined to be paused" (Ushirokawa, figure 5, teaches

switching to a different frequency carrier in the vacant time during the different frequency carrier measurement mode, and not switching to a different frequency during the normal transmission mode.) Ushirokawa does not teach "packet communication", however Yano teaches "packet communication" (Yano, figure 4B teaches consecutive frames with packets and without packets being transmitted on different frequencies.) Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement "packet communication" of Yano into Ushirokawa since Ushirokawa suggests data communication (something broad) in general and Yano suggests the beneficial use of packets such as to include a common type of data communication in the analogous art of telecommunications.

- "a carrier reception quality measuring section that measures reception quality of the different carrier the switch to which is allowed by the suppressing section" (Ushirokawa, column 1, lines 65-66 teaches quality measurement of the radio link of the different frequency carrier after the switch to that carrier has been performed.)

4. As per claim 9, Ushirokawa teaches "a wireless communication terminal apparatus" (Ushirokawa, figure 2 teaches a base station). The remaining limitations have been discussed in claim 1.

5. As per claim 10, Ushirokawa teaches "a wireless communication method for carrying out communication" (Ushirokawa, column 1, lines 9-10 teaches a mobile

communication system, a communication control method) "by switching between a plurality of different carriers" (Ushirokawa, column 1, line 27), the method comprising the steps of:

- "determining whether packet communication is continuing or paused." (Ushirokawa, figure 2, element S4 teaches a section that determines whether communication data is continuing or paused. Ushirokawa does not teach "packet continuation" and "packet communication". However Yano, teaches "packet continuation" and "packet communication" (Yano, figure 4B teaches consecutive frames with packets and without packets being transmitted on different frequencies.)) Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement "packet continuation" and "packet communication" of Yano into Ushirokawa since Ushirokawa suggests data communication (something broad) in general and Yano suggests the beneficial use of packets such as to include a common type of data communication in the analogous art of telecommunications.

- "suppressing a switch from a carrier currently used for communication to a different carrier or another carrier when the packet communication is determined to be continuing and allowing the switch to the different carrier when the packet communication is determined to be paused" (Ushirokawa, figure 5, teaches switching to a different frequency carrier in the vacant time during the different frequency carrier measurement mode, and not switching to a different frequency during the normal transmission mode.)

Ushirokawa does not teach "packet communication", however Yano teaches "packet communication" (Yano, figure 4B teaches consecutive frames with packets and without packets being transmitted on different frequencies.) Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement "packet communication" of Yano into Ushirokawa since Ushirokawa suggests data communication (something broad) in general and Yano suggests the beneficial use of packets such as to include a common type of data communication in the analogous art of telecommunications.

- "measuring reception quality of the different carrier the switch to which is allowed."
(Ushirokawa, column 1, lines 65-66 teaches quality measurement of the radio link of the different frequency carrier after the switch to that carrier has been performed.)

6. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ushirokawa (US Patent No. 7,154,915) and Yano (US 2006/0126577A1), and further in view of Williams (US 2001/0031646A1).

As per claim 2, Ushirokawa and Yano teach claim 1. Ushirokawa and Yano do not teach "the packet continuation determining section determines that the packet communication is continuing if the packet communication is resumed within a first predetermined time after a pause of said packet communication and determines that the packet communication is paused if the packet communication is not carried out for the first

predetermined time.” However Williams teaches “the packet continuation determining section determines that the packet communication is continuing if the packet communication is resumed within a first predetermined time after a pause of said packet communication and determines that the packet communication is paused if the packet communication is not carried out for the first predetermined time.” (Williams, paragraph [0075], teaches that the absence of packets over a predetermined time interval is considered significant and calls for action.)

Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement “the packet continuation determining section determines that the packet communication is continuing if the packet communication is resumed within a first predetermined time after a pause of said packet communication and determines that the packet communication is paused if the packet communication is not carried out for the first predetermined time” of Williams into Ushirokawa and Yano since Ushirokawa and Yano suggest a vacant period (something broad) in general and Suda suggests the beneficial use of a predetermined time interval to specifically define that vacant period such as simplifying the process of switching to a different carrier in the analogous art of telecommunications.

7. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ushirokawa (US Patent No. 7,154,915) and Yano (US 2006/0126577A1), and further in view of admitted prior art included in the application.

8. As per claim 3, Ushirokawa and Yano teaches claim 1. Ushirokawa and Yano do not teach “the suppressing section allows the switch to the different carrier if the packet communication continues for over or equal to a second predetermined time that is longer than the first predetermined time.” However admitted prior art teaches “the suppressing section allows the switch to the different carrier if the packet communication continues for over or equal to a second predetermined time that is longer than the first predetermined time” (what this means is to wait for a predetermined time then perform the switch to the different carrier regardless of the presence or absence of packets. Admitted prior art, figure 1 teaches that the carrier switch control section (element 21) is controlled only by the reception timing setting section (element 20) where a time interval can be set, and by no input regarding the absence or presence of data.)

Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement “the suppressing section allows the switch to the different carrier if the packet communication continues for over or equal to a second predetermined time that is longer than the first predetermined time” of the admitted prior art into Ushirokawa and Yano since Ushirokawa and Yano suggest the switch to a different carrier (something broad) in general and the admitted prior art suggests the beneficial use of switching regardless of data presence such as simplifying the process of switching to a different carrier in the analogous art of telecommunications.

9. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ushirokawa (US Patent No. 7,154,915) and Yano (US 2006/0126577A1), and further in view of Suda (US 2003/0224775A1).

10. As per claim 5, Ushirokawa and Yano teach claim 1. Ushirokawa and Yano do not teach "the packet continuation determining section determines whether the packet communication is continuing or paused based on packet pause information indicating to pause the packet communication transmitted from a communicating party". However Suda teaches "the packet continuation determining section determines whether the packet communication is continuing or paused based on packet pause information indicating to pause the packet communication transmitted from a communicating party" (Suda teaches the use of a communication suppress mode during which the communication terminal switches to a different radio channel (see Suda, abstract) and a transmission suppress signal to indicate the suppress mode to the base station (Suda, paragraph [0025])).

Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement "the packet continuation determining section determines whether the packet communication is continuing or paused based on packet pause information indicating to pause the packet communication transmitted from a communicating party" of Suda into Ushirokawa and Yano since Ushirokawa and Yano suggest a vacant period (something broad) in general and Suda suggests the beneficial use of a signal transmitted from a communicating party to announce that vacant period

such as all involved communication parties being in sync to perform their tasks in a cooperative manner in the analogous art of telecommunications.

11. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ushirokawa (US Patent No. 7,154,915) and Yano (US 2006/0126577A1), and further in view of Kikuma (US 2004/0106407).

12. As per claim 6, Ushirokawa and Yano teach claim 1. Ushirokawa and Yano do not teach "a transmission rate acquiring section that acquires a transmission rate of the packet communication, wherein the suppressing section allows the switch to the different carrier even if the packet communication continuing when the transmission rate is lower than a predetermined value." However, Kikuma teaches "a transmission rate acquiring section that acquires a transmission rate of the packet communication, wherein the suppressing section allows the switch to the different carrier even if the packet communication continuing when the transmission rate is lower than a predetermined value." (Kikuma, paragraph [0120], teaches using the transmission rate to decide the switch to a different carrier frequency, which implies a transmission rate acquiring section. Kikuma, paragraph [0120] also teaches the higher transmission rate, the higher the probability of switching to a different carrier frequency, thus implies a transmission rate threshold where the switch will be triggered.)
Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement "a transmission rate acquiring section that acquires a

transmission rate of the packet communication, wherein the suppressing section allows the switch to the different carrier even if the packet communication continuing when the transmission rate is lower than a predetermined value" of Kikuma into Ushirokawa and Yano since Ushirokawa and Yano suggest a switch to a different carrier (something broad) in general and Ichikawa suggests the beneficial use of using transmission rate as a basis to allow the switch to a different carrier such as to define specific conditions under which said switch may happen and to make the switching more efficient in the analogous art of telecommunications.

13. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ushirokawa (US Patent No. 7,154,915) and Yano (US 2006/0126577A1), and further in view of Ichikawa (Patent No. JP02003061150A).

14. As per claim 7, Ushirokawa and Yano teach claim 1. Ushirokawa and Yano does not teach "a packet quality measuring section that measures the packet quality or the reception quality of the received packet, wherein, when the packet quality is poorer than a predetermined quality, the suppressing section allows the switch to the different carrier even if the packet communication is continuing." However Ichikawa teaches "a packet quality measuring section that measures the packet quality or the reception quality of the received packet, wherein, when the packet quality is poorer than a predetermined quality, the suppressing section allows the switch to the different carrier even if the packet communication is continuing." (Ichikawa, abstract, teaches packet

reception quality, which implies a section that measures packet reception quality.

Ichikawa, abstract, also teaches the selection of wireless carriers which have a packet reception quality exceeding a predetermined level and the dismissal of wireless carriers which have a packet reception quality below a predetermined level.)

Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement "a packet quality measuring section that measures the packet quality or the reception quality of the received packet, wherein, when the packet quality is poorer than a predetermined quality, the suppressing section allows the switch to the different carrier even if the packet communication is continuing" of Ichikawa into Ushirokawa and Yano since Ushirokawa and Yano suggest a switch to a different carrier (something broad) in general and Ichikawa suggests the beneficial use of using packet reception quality as a basis to allow the switch to a different carrier such as to define specific conditions under which said switch may happen and to make the switching more efficient in the analogous art of telecommunications.

15. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ushirokawa (US Patent No. 7,154,915) and Yano (US 2006/0126577A1), and further in view of Kikuma (US Patent No. 7,027,816).

16. As per claim 8, Ushirokawa and Yano teach claim 1. Ushirokawa and Yano do not teach "a movement speed estimating section that estimates a movement speed of the wireless communication apparatus, wherein, when the movement speed is greater

than a predetermined value, the suppressing section allows the switch to the different carrier even if the packet communication is continuing." However Kikuma teaches "a movement speed estimating section that estimates a movement speed of the wireless communication apparatus, wherein, when the movement speed is greater than a predetermined value, the suppressing section allows the switch to the different carrier even if the packet communication is continuing." (Kikuma, figure 8, element S152 teaches receiving moving velocity of mobile communication terminal, which implies a movement speed estimating section. Kikuma, abstract, also teaches that the higher the terminal moving speed is, the higher the probability of switching to a different carrier frequency, thus implies a speed threshold where the switch will be triggered.) Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement "a movement speed estimating section that estimates a movement speed of the wireless communication apparatus, wherein, when the movement speed is greater than a predetermined value, the suppressing section allows the switch to the different carrier even if the packet communication is continuing" of Kikuma into Ushirokawa and Yano since Ushirokawa and Yano suggest a switch to a different carrier (something broad) in general and Ichikawa suggests the beneficial use of using movement speed as a basis to allow the switch to a different carrier to define specific conditions under which said switch may happen and to make the switching more efficient in the analogous art of telecommunications.

Allowable Subject Matter

17. Claim 4 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to THUAN NGUYEN whose telephone number is (571)270-7189. The examiner can normally be reached on 7:30 AM to 5:00 PM, Monday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Pankaj Kumar can be reached on 571-272-3011. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Application/Control Number: 10/574,599
Art Unit: 4145

Page 15

T.N.
/ROBERT WILSON/
Primary Examiner, Art Unit 2619